STATEMENT (CONCLUSIONS)

Cervical nerve roots frequently contrast enhance on MRI. Of the nerve roots that contrast enhance a large

proportion of them have no corresponding lesion. More research is needed however to better understand the implication of this.

Accuracy of radiographic diagnosis of pneumoperitoneum in the dog and cat

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OBJECTIVES

Radiography is commonly included in the diagnostic investigation of animals with suspicion of gastrointestinal perforation, but the resultant pneumoperitoneum can be hard to detect. This study aimed to identify (1) the accuracy of radiographic diagnosis of pneumoperitoneum and (2) determine if observer experience affected accuracy.

METHODS

This retrospective case-controlled study evaluated dogs and cats with abdominal radiographs and either surgical or computed tomographic confirmation of

pneumoperitoneum (cases) or peritonitis without pneumoperitoneum (controls).

Radiographs were reviewed by a board-certified radiologist, an imaging resident, an experienced general practitioner and a veterinary student.

Accuracy, sensitivity and specificity were calculated for all observers. Agreement between observers and with final diagnosis was assessed with Cohen's kappa. Sensitivity and specificity between observers were compared using the McNemar test.

RESULTS

Radiographic studies from 60 dogs and 8 cats were evaluated; 34 animals had confirmed perforation. Accuracy was fair to excellent for all observers; student 61.8%, general practitioner 70.6%, resident 83.8%, radiologist 85.3%. There was no significant difference in sensitivity between observers (all between 70.6–85.3%); however, there was a significant difference in specificity between both the resident (91.2%) and radiologist (91.2%) and the student (52.9%) ($P < 0.001$) and the general practitioner (55.9%) ($P = 0.002$). Overall there was slight to substantial agreement between observers (kappa 0.251–0.731), with highest agreement between the radiologist and resident.

STATEMENT (CONCLUSIONS)

Abdominal radiography, when interpreted by veterinarians with differing experience, has variable accuracy for diagnosis of pneumoperitoneum. Less experienced observers tend to over-diagnose pneumoperitoneum, with resultant high sensitivity but low specificity.